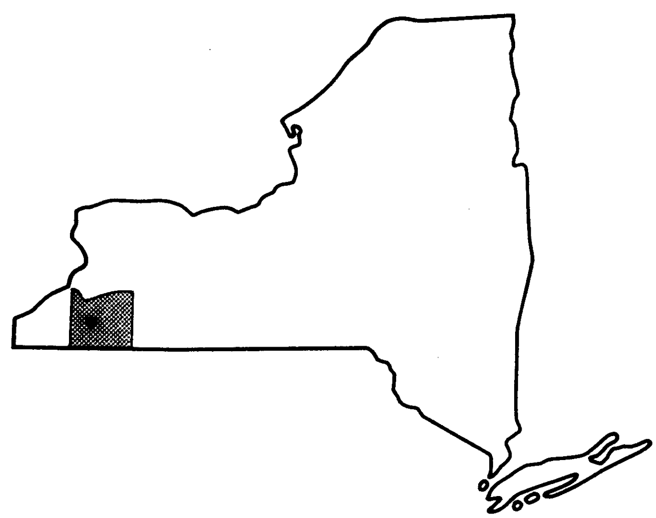
FLOOD INSURANCE STUDY

VILLAGE OF ELLICOTTVILLE, NEW YORK
CATTARAUGUS COUNTY



REVISED:
MAY 2, 1994

Federal Emergency Management Agency

COMMUNITY NUMBER - 360070

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision (LOMR) process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial FIS Effective Date: FIS report dated August 1978 (Flood Insurance Rate Map dated February 1, 1979)

Revised FIS Date: May 2, 1994

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FLOOD INSURANCE STUDY
VILLAGE OF ELLICOTTVILLE, CATTARAUGUS COUNTY, NEW YORK

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study revises and updates a previous Flood Insurance Study/Flood Insurance Rate Map for the Village of Ellicottville, Cattaraugus County, New York. This information will be used by the Village of Ellicottville to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for the original study were prepared by the New York State Department of Environmental Conservation (NYSDEC) for the Federal Emergency Management Agency (FEMA), under Contract No. H-3856. This work was completed in March 1977.

The hydrologic and hydraulic analyses for this revision were prepared by Kozma Associates Consulting Engineers, P.C., for FEMA, under Contract No. EMW-90-C-3103. This work was completed in September 1991.

1.3 Coordination

The purpose of an initial Consultation Coordination Officer's (CCO) meeting is to discuss the scope of the Flood Insurance Study. A final CCO meeting is held to review the results of the study.

For the original study, an initial CCO meeting was held on September 17, 1975, with representatives of the village, FEMA, the U.S. Department of Agriculture, Soil Conservation Service (SCS), the Cattaraugus County Planning Board, a representative from the Seneca Nations, and the NYSDEC.

A search for basic data was made at all levels of government. The SCS provided information that served as part of the input for the hydraulic analyses. U.S. Geological Survey (USGS) maps were used to determine the drainage boundaries. Information regarding flow data was not available from the USGS since there are no existing flow records in the area .

A final CCO meeting for the original study was held on February 8, 1977. At the final CCO meeting, town officials noted that changes had been made in the town/village boundary to accommodate the village waste water treatment plant. Mention was also made of a source of overbank flooding in the town that affects the village, and also locations of some of the inundation limits were questioned. As a result of these local comments, the flood boundaries were adjusted so that the Flood Insurance Study results would more closely agree with the observations made by local residents.

For this revised study, an initial CCO meeting was held on January 19, 1989, and a final CCO meeting was held on June 4, 1992. Both of these meetings were attended by representatives of the NYSDEC, the Village of Ellicottville, and FEMA.

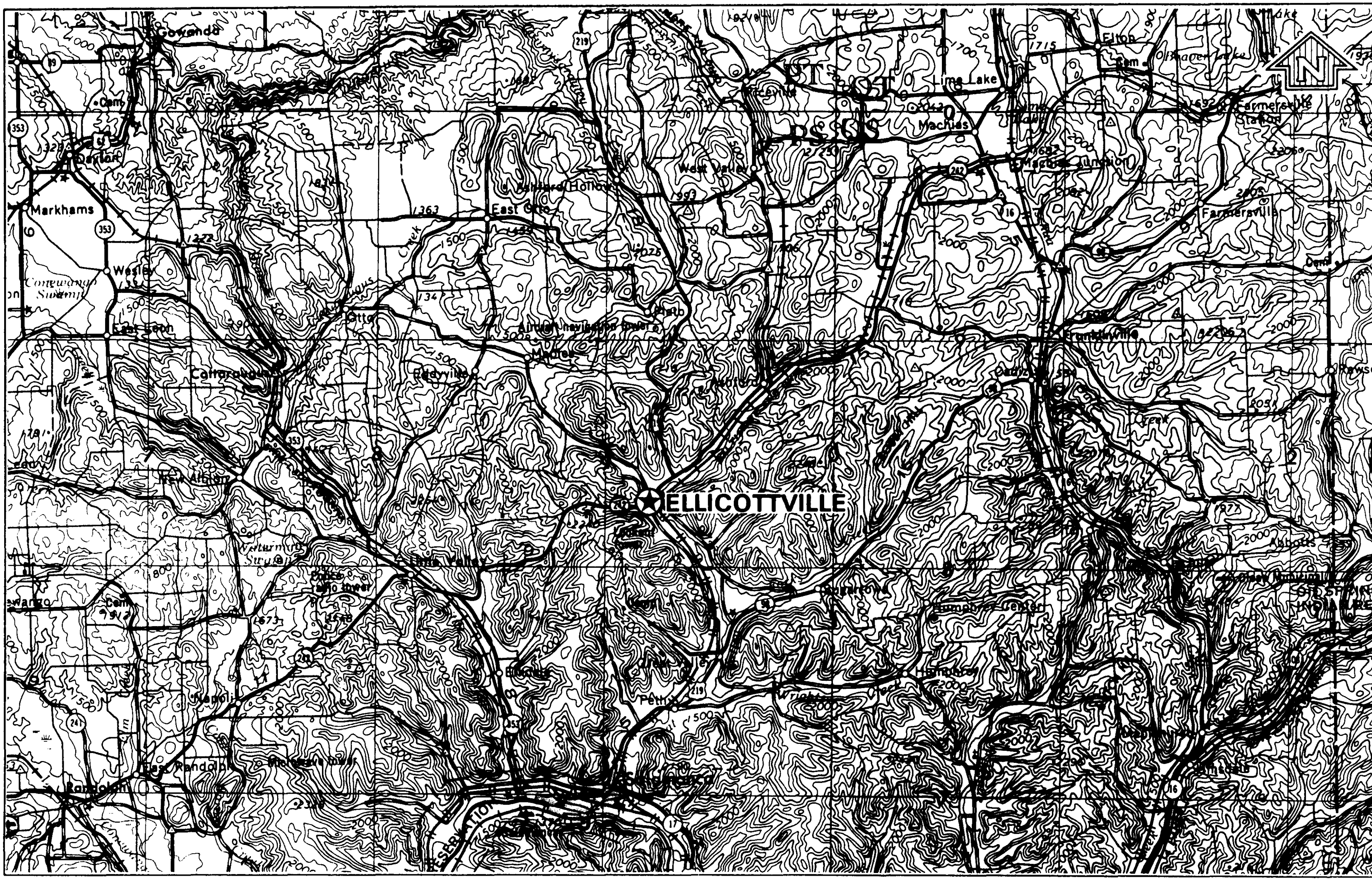
2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Village of Ellicottville, Cattaraugus County, New York. The area of study is shown on the Vicinity Map (Figure 1).

In the original study, the following flooding sources were studied by detailed methods: Great Valley Creek, Plum Creek, and Elk Creek. In this revision, the following flooding sources were studied by detailed methods: Elk Creek from its confluence with Great Valley Creek to the upstream corporate limits of the Village and Town of Ellicottville; Great Valley Creek for its entire length within the community; Plum Creek from its confluence with Great Valley Creek to the upstream corporate limits with the Town of Ellicottville; and Holiday Valley Creek for its entire length within the community.

Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the Flood Insurance Rate Map (Exhibit 2). The



FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY

(CATTARAUGUS CO.)

APPROXIMATE SCALE

4 0 4 8 16 MILES

VICINITY MAP

FIGURE 1

areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

2.2 Community Description

The Village of Ellicottville is located entirely within the Town of Ellicottville in the central portion of Cattaraugus County in the western part of New York. It covers an area of 0.7 square miles. In 1960, the population of the village was 1,150 persons. The 1970 census shows the population was 923 people indicating a decline in the population during that period (Reference 1). Village officials attribute the apparent decline in population to an increasing number of seasonal residents who are not reflected in the census figures. According to the 1980 U.S. Census, its population was 713 (Reference 2). The village experienced a 25 percent decrease in population since the 1970 census, which showed a population of 955 people.

The Village of Ellicottville supports several seasonal activities. Three ski slopes and a golf course are located close to the village. As a result, in the months during when these sports are active, the population of the village increases, though this increase is not reflected in the published U.S. census figures. In the past, most of the development has been on the valley floor, within or close to the village. Most of the recent developments, however, have been in the upland areas, particularly Holimont Ski Club west of the Village of Ellicottville and Holiday Valley Ski Club southwest of the village.

Great Valley Creek and its tributaries drain the central portion of the village. The creek has its origin in the upper portion of the Town of Ellicottville and flows through the village in a wide valley surrounded by hills that rise abruptly to the east and west. The creek continues in a southerly direction through the Town of Great Valley and the Allegheny Indian Reservation to its confluence with the Allegheny River near the eastern boundary of the City of Salamanca.

Great Valley Creek drainage basin upstream from the center of the Village of Ellicottville encompasses 42.65 square miles of drainage area. The topography of the basin area is rather diversified in nature, ranging from mountainous wooded land to valley regions. Elevations range from 2,100 feet near the upper limit of the basin to a streambed elevation of 1,540 feet near the center of the village.

The climate of the region is greatly influenced by the Great Lakes and is characteristic of western New York by having cold, snowy winters and cool, wet summers. The average temperature in February is 20.6 degrees Fahrenheit (°F) while in July the average temperature is 66°F. The average annual precipitation is approximately 46 inches (Reference 3).

The floodplains of the Village of Ellicottville, along Great Valley Creek and its tributaries, are rural in character with much of the lands occupied by roads, railroads, residences, and some commercial development.

Portions of the floodplain area are illustrated in Figures 2 through 5.

2.3 Principal Flood Problems

Flooding can occur in the community during any season of the year, but it is most likely to occur in the late winter-early spring months when the melting snow may combine with intense rainfall to produce increased runoff from the three major streams that flow in the village. Elk Creek and Great Valley Creek present the greatest threat of flooding.

There is no gaging station located in the village. However, the flood of September 1967 is considered to be the maximum known flood in the county. There is insufficient information on this event to provide an estimate of its recurrence interval.

The area bounded by Washington Street, Jefferson Street, and Plum Creek overtops its east bank near the intersection of Elizabeth Street and Washington Street. However, Plum Creek is confined within its banks from this point on, until its confluence with Great Valley Creek.

2.4 Flood Protection Measures

A berm was constructed along the northeasterly bank of Plum Creek, which contains the 100-year flood discharge for most of its length within the village. There are no other known structural flood control measures in existence in the village. However, in an effort to minimize the risk of flood hazard; promote the public health, safety, and general welfare; and to minimize public and private losses due to flooding, the Village of Ellicottville in 1987 adopted Local Law No. 3 entitled Flood Damage Prevention (Reference 4).

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. A flood event of a magnitude which

Figure 2 - Great Valley Creek in the Village of Ellicottville, looking southwest at Mill Street.

Figure 3 - Great Valley Creek in the Village of Ellicottville, looking northeast at Marth Street (immediately downstream of the confluence with Elk Creek).

Figure 4 - Elk Creek in the Village of Ellicottville, looking north at Parkside Drive.

Figure 5 - Plum Creek in the Village of Ellicottville, looking west at N.Y.S. Route 219.

is expected to be equaled or exceeded once on the average during any 100-year period (recurrence interval) has been selected as having special significance for floodplain management and for flood insurance rates. This event, commonly termed the 100-year flood, has a 1 percent chance of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the community.

In the original study, a regional analysis using USGS stream gaging records for maximum peak flow data was prepared by the NYSDEC to establish Exceedence-Interval Discharge relationships at selected points along the waterways of the Allegheny River Basin for uncontrolled drainage areas larger than five square miles (References 5 and 6). For smaller areas, a Bureau of Public Roads technique was used to establish hydrology (Reference 7). The statistical procedures used in this analysis are those proposed by Leo R. Beard that utilizes a log-Pearson Type III distribution as a base method for flood flow frequency studies (Reference 8). This methodology conforms with the uniform techniques for determining flood flow frequencies studies as set forth by the Hydrology Committee of the United States Water Resources Council (Reference 9).

In the original study, streamflow records are available for Great Valley Creek. However, the number of years for when such data are available for the stream is too small to be used alone in determining a flood flow-frequency relationship. Gage data was used to calibrate synthetically produced streamflows with historical flooding.

To provide the hydrology for Great Valley Creek, Elk Creek, and Plum Creek, a synthetic rainfall-runoff relationship method, based on a dimensionless unit hydrograph, was used to develop flood flow-frequency relationships. The 24-hour rainfall amounts for frequencies up to 100 years, as obtained from the Rainfall Frequency Atlas of the United States were plotted on log-normal paper, and the rainfall amount for the 500-year frequency was extrapolated from the resulting graph (Reference 10).

The watershed of each stream was divided into subareas to evaluate the hydrologic effects of as many tributaries as would be significant. The USGS maps were used to determine the drainage boundaries (Reference 11). The computer program TR-20 developed by the SCS, was used to compute surface runoff (Reference 12). It takes into account conditions affecting runoff such as land use, type of soil, shape, and slope of watershed, antecedent moisture condition, etc. It develops a hydrograph with those from other tributaries and prints out the total composite hydrograph peak discharges, and times of occurrence at each desired point in the watershed for each storm evaluated. From this data frequency discharge, drainage area curves were plotted for each evaluation point.

For Elk Creek, Great Valley Creek, Holiday Valley Creek, and Plum Creek in this revision, the peak discharges of the selected recurrence interval were determined using the procedures and regression equations outlined in "USGS Water Resources Investigations 79-83," for ungaged sites on gaged streams (References 13 and 14).

For the western region of New York, the following equation was used:

$$Q = K(DA)^{x}(St + 10)^{-y}$$

where Q is the stream discharge; DA is the drainage area; St is the percentage of total drainage area shown as lakes, ponds, and swamps, and K, x, and y are functions of the frequency. The value of K is 49,900, x is 0.733, and y is 2.03 for the 100-year flood discharge.

No adjustment was made to the discharges at the Great Valley Creek due to the existence of the USGS gaging station No. 03011000 at Salamanca because the drainage areas at the points of interest were less than 50 percent of the drainage area at the USGS gaging station at Salamanca.

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-YEAR	50-YEAR	100-YEAR	500-YEAR
GREAT VALLEY CREEK					
At the corporate limits with the Town of Ellicottville	44.5	*	*	5,195	*
Upstream of the confluence of Plum Creek	40.4	*	*	4,675	*
Upstream of the confluence of Elk Creek	38.5	*	*	4,375	*
ELK CREEK					
At the confluence with Great Valley Creek	3.4	*	*	1,150	*
PLUM CREEK					
At the confluence with Great Valley Creek	2.5	*	*	910	*
HOLIDAY VALLEY CREEK					
At the confluence with Great Valley Creek	1.6	*	*	660	*

*Data not computed

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

In the original study, cross sections were located at close intervals above and below bridges, at control sections along the stream length and at significant changes in ground relief, land use, or land cover. Cross section geometry was obtained through field survey as was the base line, which was used for horizontal control.

Reach lengths for the channel were measured along the centerline of channel between sections, and overbank reach lengths were measured along the approximate centerline of the effective out-of-channel flow area.

The frequency discharge, drainage area curves at each cross section were used to develop the corresponding stage-frequency relationships.

In this revision, cross-sectional data for the backwater analyses were obtained from topographic maps at a scale of 1:2,400, which were prepared from aerial photography (Reference 15). The below-water sections were obtained by field measurements.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Insurance Rate Map (Exhibit 2).

In the original study, flood profiles for Elk Creek, Great Valley Creek, and Plum Creek were calculated using the SCS WSP-2 Water Surface Profiles Computer Program (Reference 16). This program uses the standard step method, with some modifications, to compute profiles between valley sections. All profiles are computed in the upstream direction; therefore, only subcritical flow, a condition normally characteristic of natural streams, can be analyzed. For any supercritical flows encountered, the program will assume critical flow and resume computations. At any one road restriction, WSP-2 can compute head losses through one bridge opening or up to five culvert openings with difference configurations.

For starting profile computations, the tailwater elevations on Great Valley Creek, obtained from the Flood Insurance Study for the Town of Ellicottville, were used (Reference 17).

In this revision, water-surface elevations of floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 18). Starting water-surface elevations were calculated using the slope/area method. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

In the original study, channel roughness factors (Manning's "n") were determined by field inspection and based on the <u>National Engineering Handbook</u>, Section 5, (Supplement B) (Reference 19). In arriving at a realistic value, due weight was given to the natural materials the channel was composed of, surface irregularity, variations in shape and size of cross sections, characteristics of obstructions, such as debris deposits, stumps, exposed roots, boulders, fallen and lodged logs, etc., type of vegetation, and degree of meandering. The channel "n" values ranged from 0.050 to 0.075, and overbank "n" values ranged from 0.045 to 0.090.

For this revision, channel roughness factors were chosen by engineering judgment and based on field observations of the stream and floodplain areas. For Elk Creek, channel "n" values ranged from 0.030 to 0.040, and overbank "n" values ranged from 0.070 to 0.080. For Great Valley Creek, channel "n" values ranged from 0.030 to 0.045, and overbank "n" values ranged from 0.065 to 0.090. For Plum Creek, channel "n" values ranged from 0.030 to 0.040, and overbank "n" values ranged from 0.065 to 0.090. For Holiday Creek, channel "n" values ranged from 0.030 to 0.035, and the overbank "n" values ranged from 0.045 to 0.090.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study, and their descriptions, are shown on the maps.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100-year floodplain boundaries to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. For the streams studied in detail in the original study, the 100-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:4,800 with a contour interval of 10 feet (Reference 20). In this revision, floodplain boundaries between cross sections were interpolated using topographic maps at a scale of 1:2,400 with a contour interval of 4 feet.

The 100-year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the floodplain. The floodways were computed using HUD-15 Computer Program (Reference 21). Where special topographic features required it, the floodway was adjusted more toward one side of the stream as necessary. The results of these computations are tabulated at selected cross sections of each stream studied by detailed methods (Table 2). The computed floodways are shown on the Flood Insurance Rate Map (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown. A portion of the floodway width for Great Valley Creek extends beyond the corporate limits.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 2 for certain downstream cross sections of Plum Creek, Elk Creek, and Holiday Valley Creek are lower than the regulatory flood elevations in that area, which must take into account the 100-year flooding due to backwater from other sources.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 6.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE
Great Valley Creek								
A	270[1]	230[4]	1,067	4.9	1,521.3	1,521.3	1,522.1	0.8
B	2,410[1]	350	1,391	3.7	1,528.4	1,528.4	1,528.7	0.3
C	3,700[1]	395	1,221	4.3	1,531.7	1,531.7	1,531.9	0.2
D	5,165[1]	63	495	9.4	1,533.7	1,533.7	1,534.6	0.9
E	6,000[1]	85	686	6.4	1,540.4	1,540.4	1,540.4	0.0
F	7,350[1]	210[4]	1,173	3.7	1,541.9	1,541.9	1,542.3	0.4
Elk Creek								
A	170[2]	30	150	7.7	1,537.9	1,534.7[5]	1,535.7	1.0
B	1,085[2]	119	318	3.6	1,542.0	1,540.1[5]	1,540.6	0.5
C	1,990[2]	130	364	3.2	1,542.7	1,542.7	1,543.7	1.0
D	2,795[2]	130	359	3.2	1,547.5	1,547.5	1,548.4	0.9
Holiday Valley Creek								
A	105[3]	16	88	7.5	1,521.0	1,518.4[5]	1,519.4	1.0
Plum Creek								
A	200[2]	28	121	7.5	1,531.9	1,529.1[5]	1,530.1	1.0
B	1,620[2]	44	123	7.4	1,544.8	1,544.8	1,544.8	0.0
C	3,300[2]	44	108	8.4	1,573.8	1,573.8	1,573.9	0.1
D	4,235[2]	193	407	2.2	1,596.3	1,596.3	1,596.3	0.0

[1] Feet from confluence of Holiday Valley Creek
[2] Feet above confluence with Great Valley Creek
[3] Feet above downstream town corporate limits
[4] Width extends beyond corporate limits
[5] Elevations computed without consideration of backwater effects from Great Valley Creek

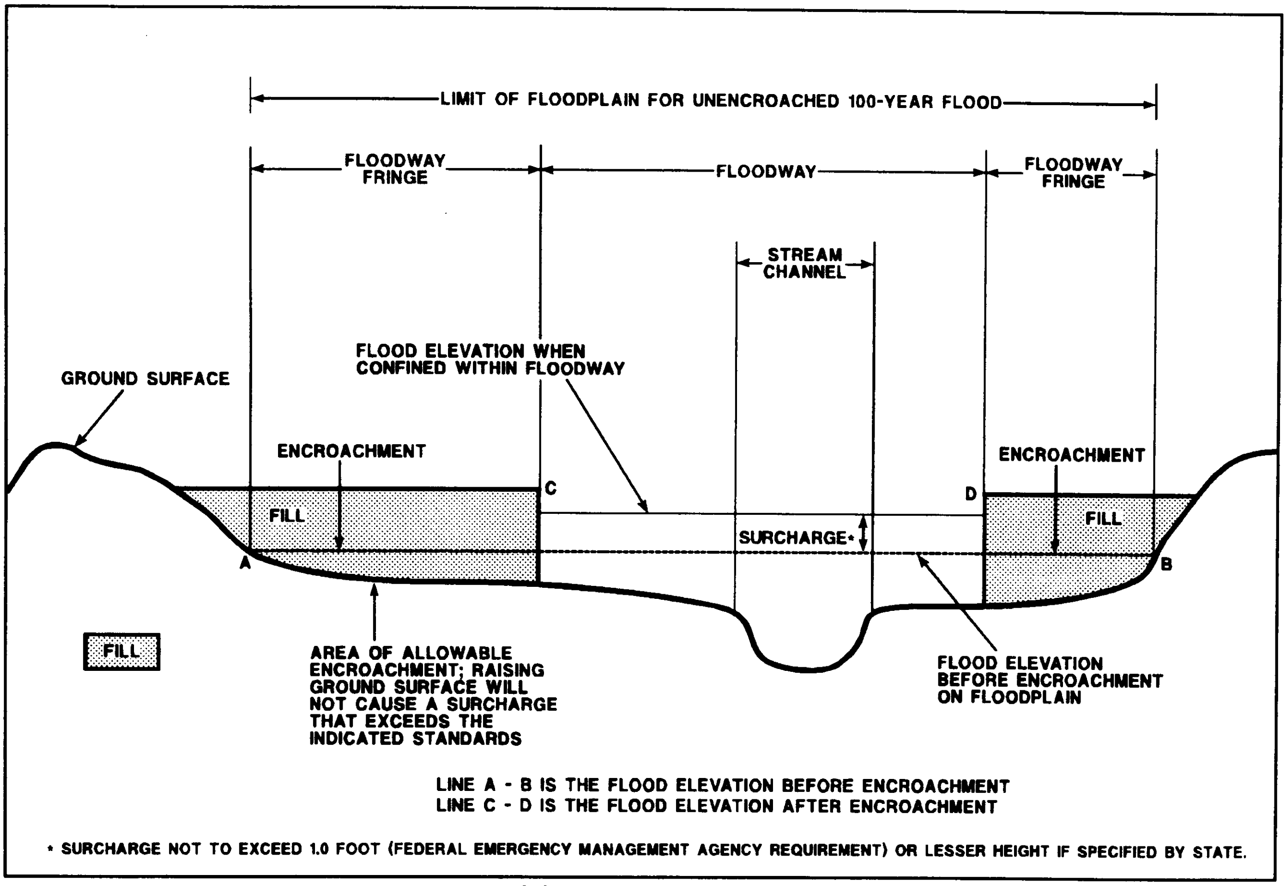
TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY
(CATTARAUGUS CO.)

FLOODWAY DATA

GREAT VALLEY CREEK - ELK CREEK - HOLIDAY VALLEY CREEK - PLUM CREEK



FLOODWAY SCHEMATIC Figure 6

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map (FIRM) is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable. The FIRM includes flood hazard information that was presented separately on the Flood Boundary and Floodway Map in the previously printed Flood Insurance Study for the Village of Ellicottville.

7.0 OTHER STUDIES

A Flood Insurance Study is currently being prepared for the Town of Ellicottville (Reference 22).

Because it is based on more up-to-date analyses, the Flood Insurance Study supersedes the previously printed Flood Insurance Study for the Village of Ellicottville (Reference 23).

Please note that the Flood Insurance Study for the Town and Village of Ellicottville are not in exact agreement; specifically, a mismatch exists for the floodplain of Great Valley Creek.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Natural and Technological Hazards Division, 26 Federal Plaza, Room 1351, New York, New York 10278.

9.0 BIBLIOGRAPHY AND REFERENCES

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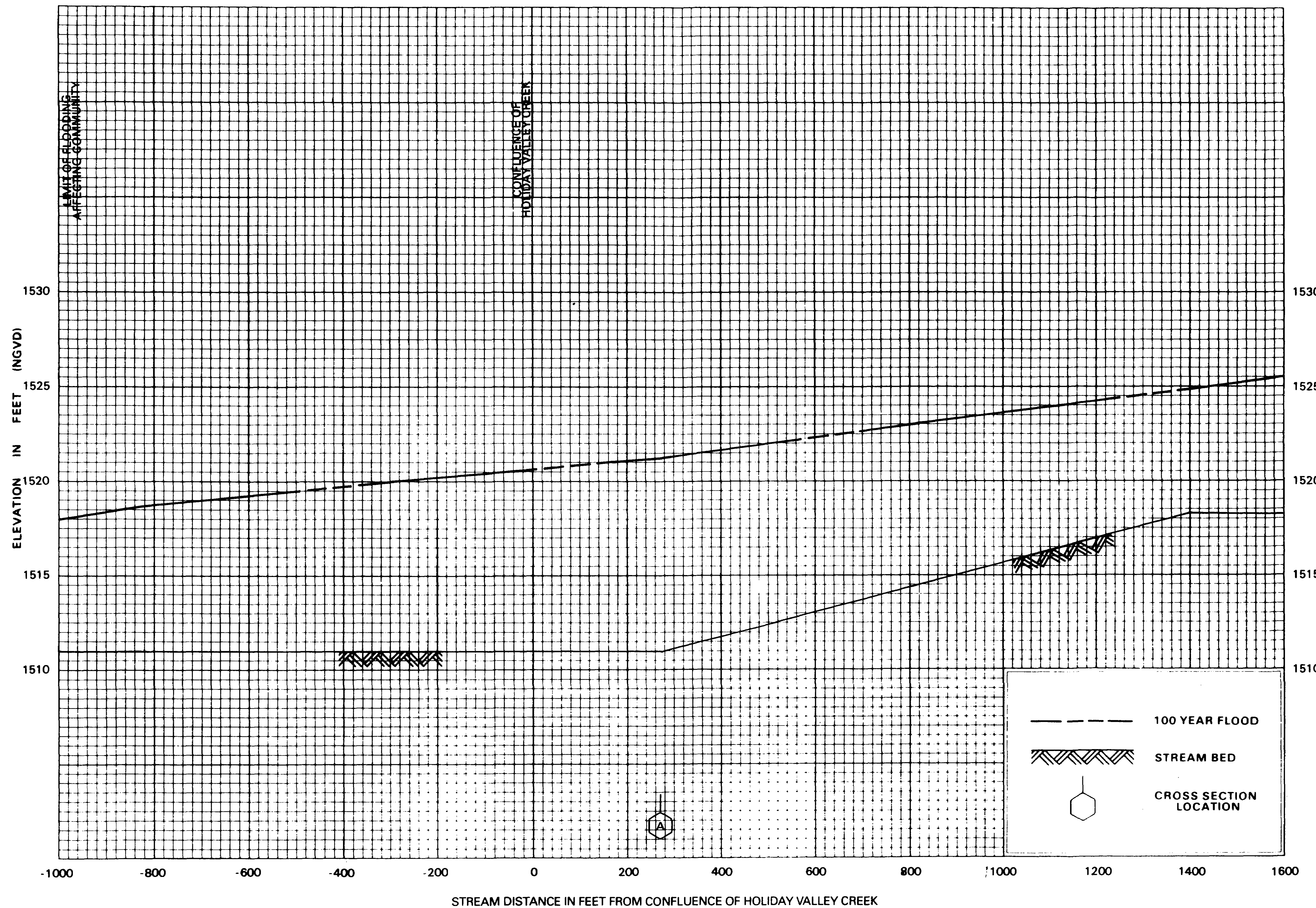


FLOOD PROFILES

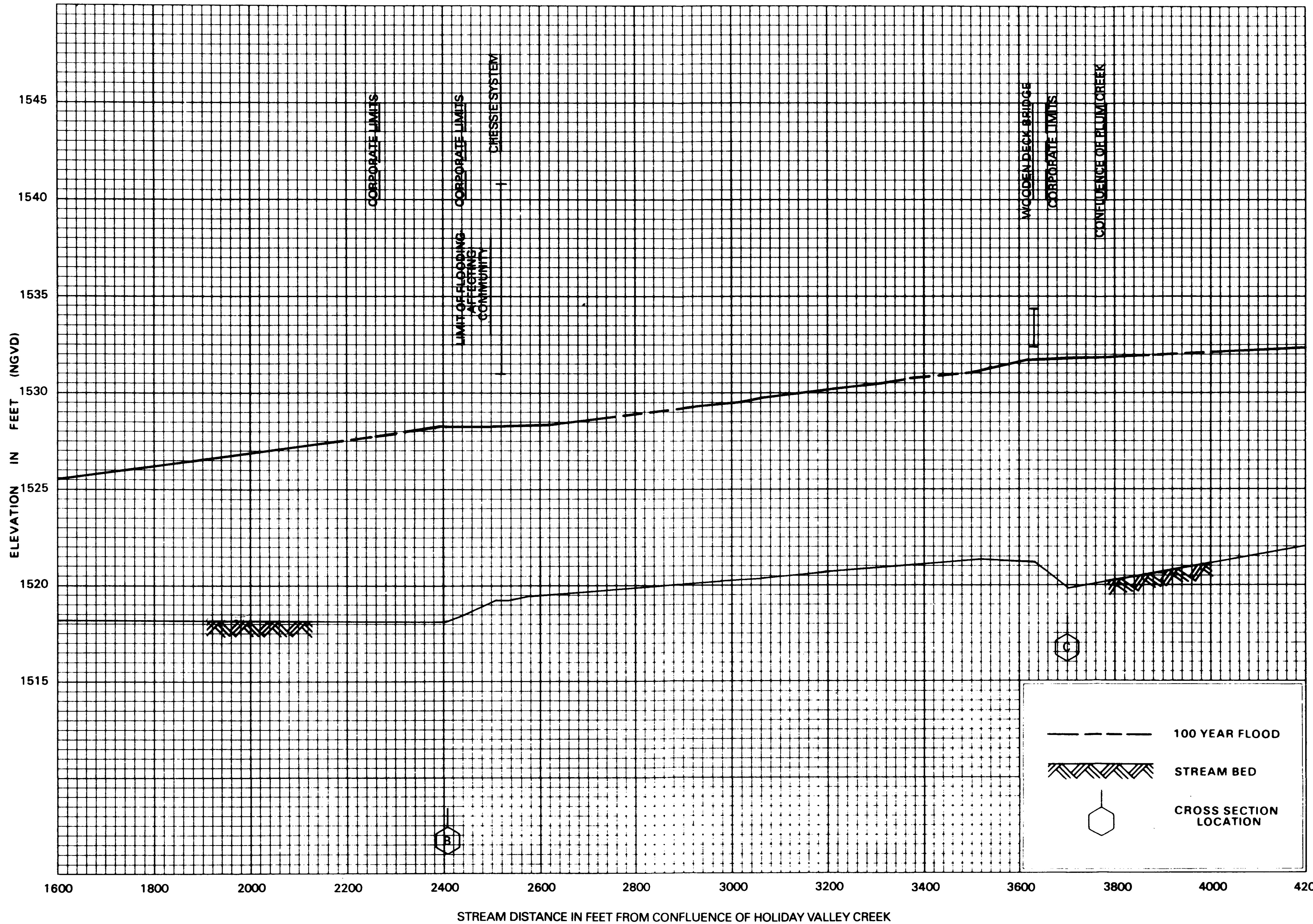
GREAT VALLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY

(CATTARAUGUS CO.)

01P



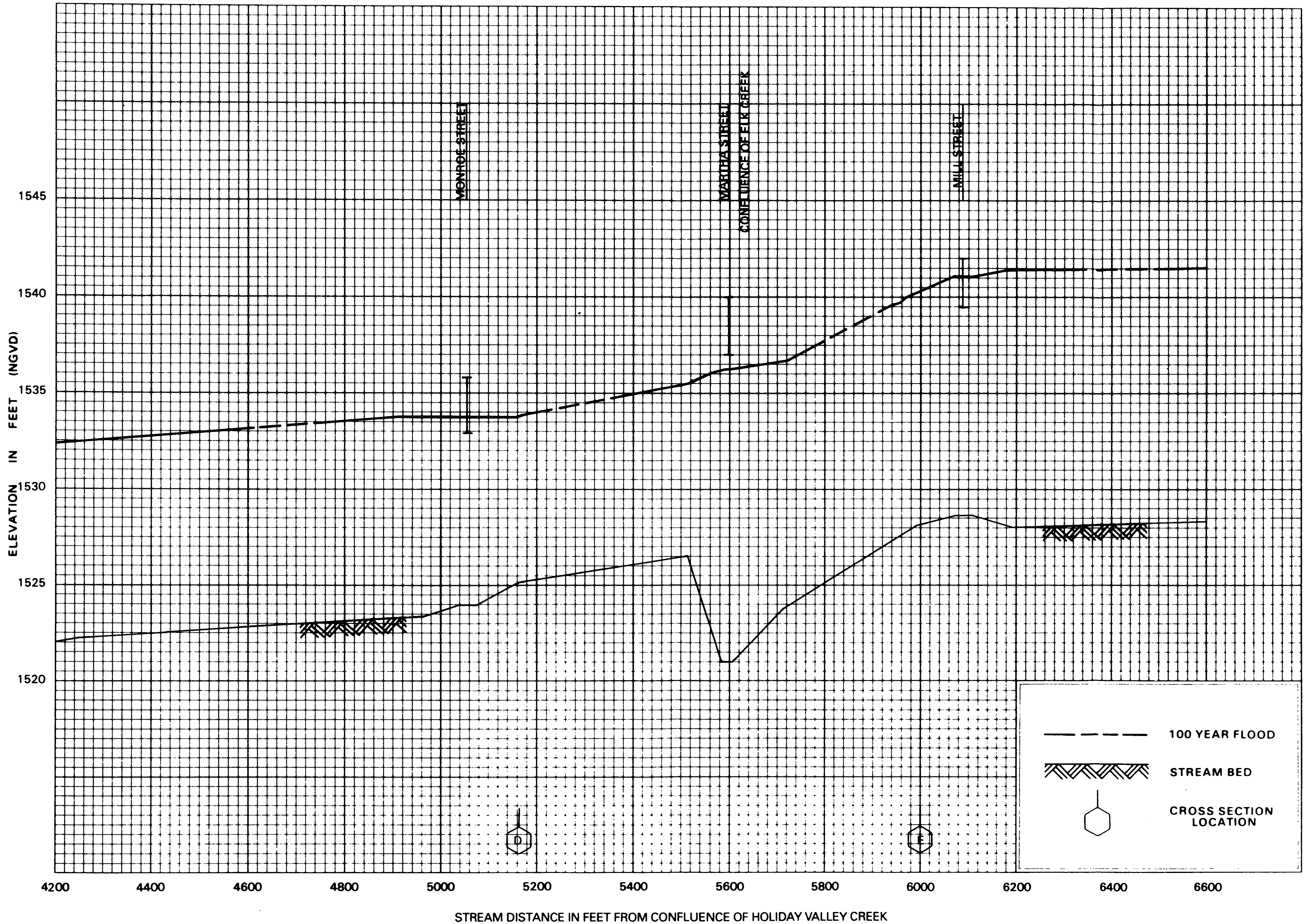
FLOOD PROFILES

GREAT VALLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY
(CATTARAUGUS CO.)

02P



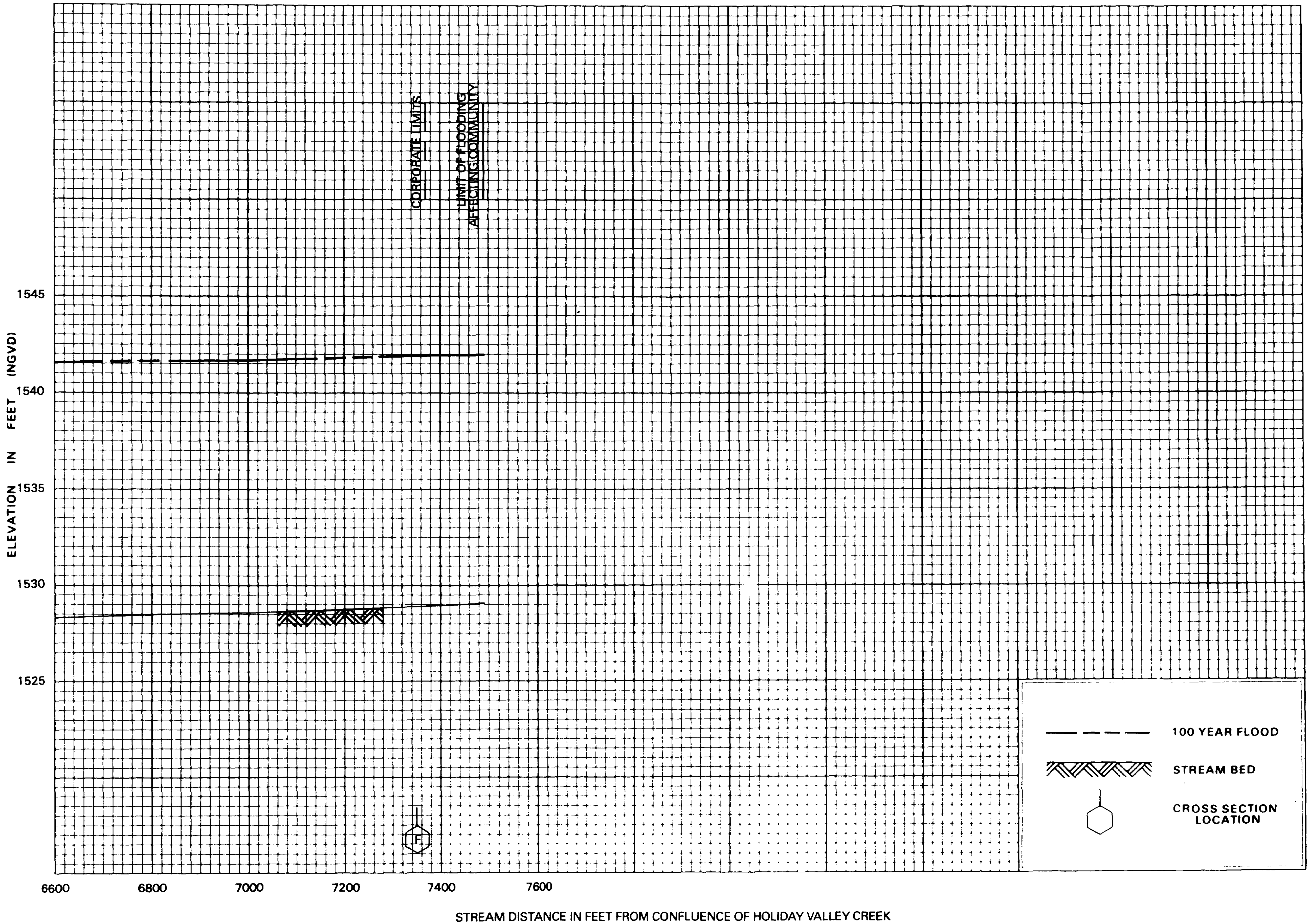
FLOOD PROFILES

GREAT VALLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY
(CATTARAUGUS CO.)

03P



FLOOD PROFILES

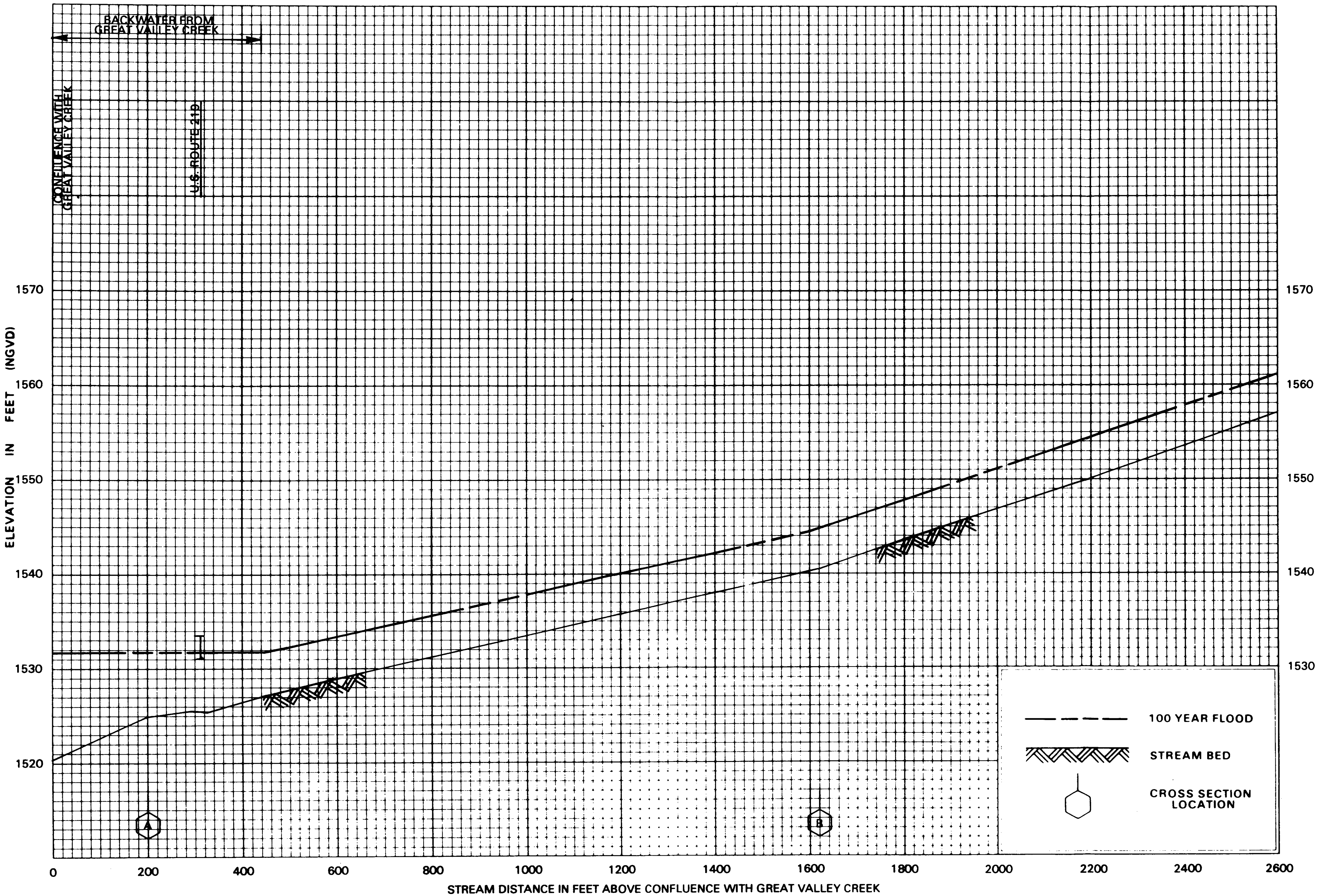
GREAT VALLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY

(CATTARAUGUS CO.)

04P



FLOOD PROFILES

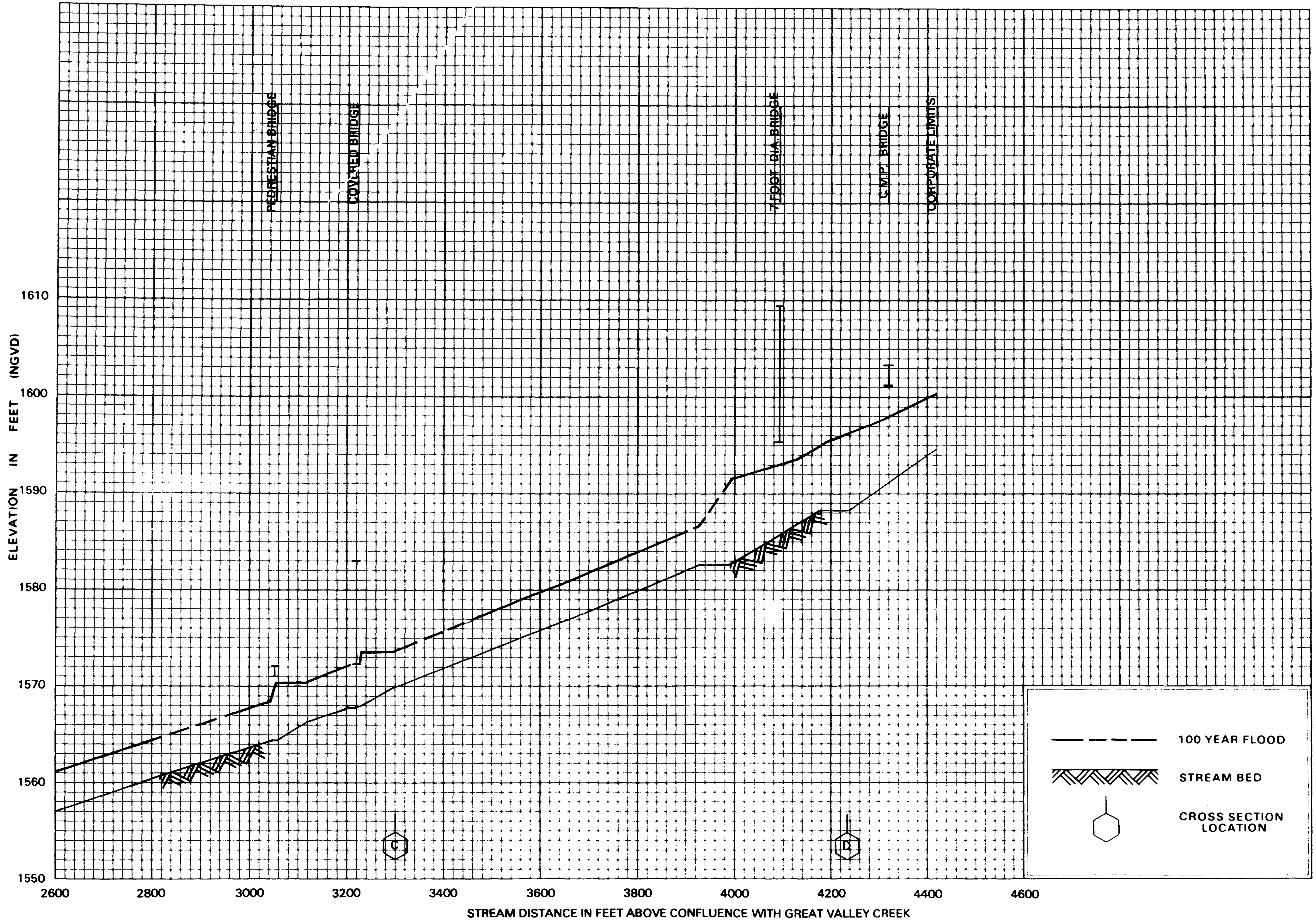
PLUM CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY

(CATTARAUGUS CO.)

05P



FLOOD PROFILES

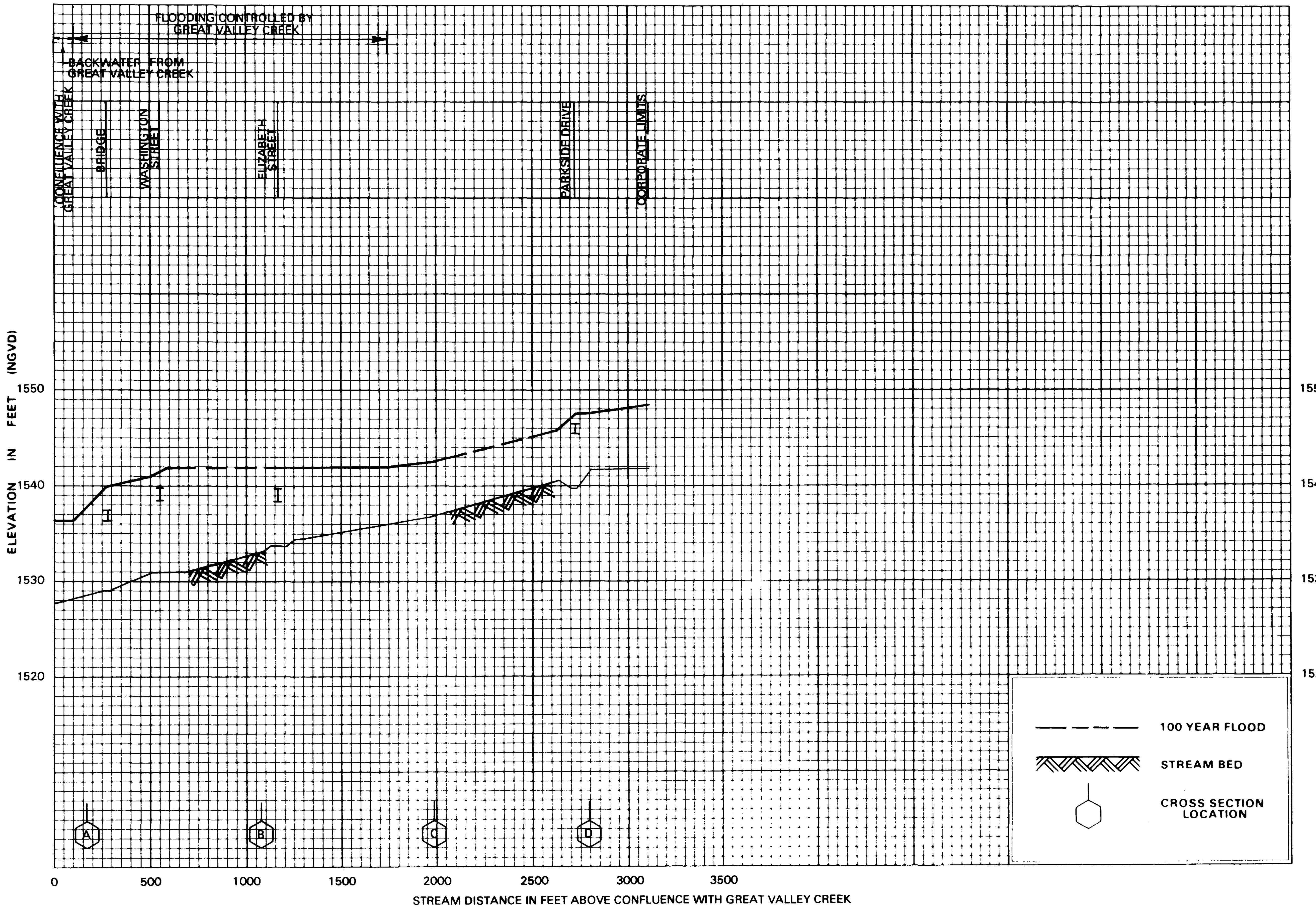
PLUM CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY

(CATTARAUGUS CO.)

06P



FLOOD PROFILES

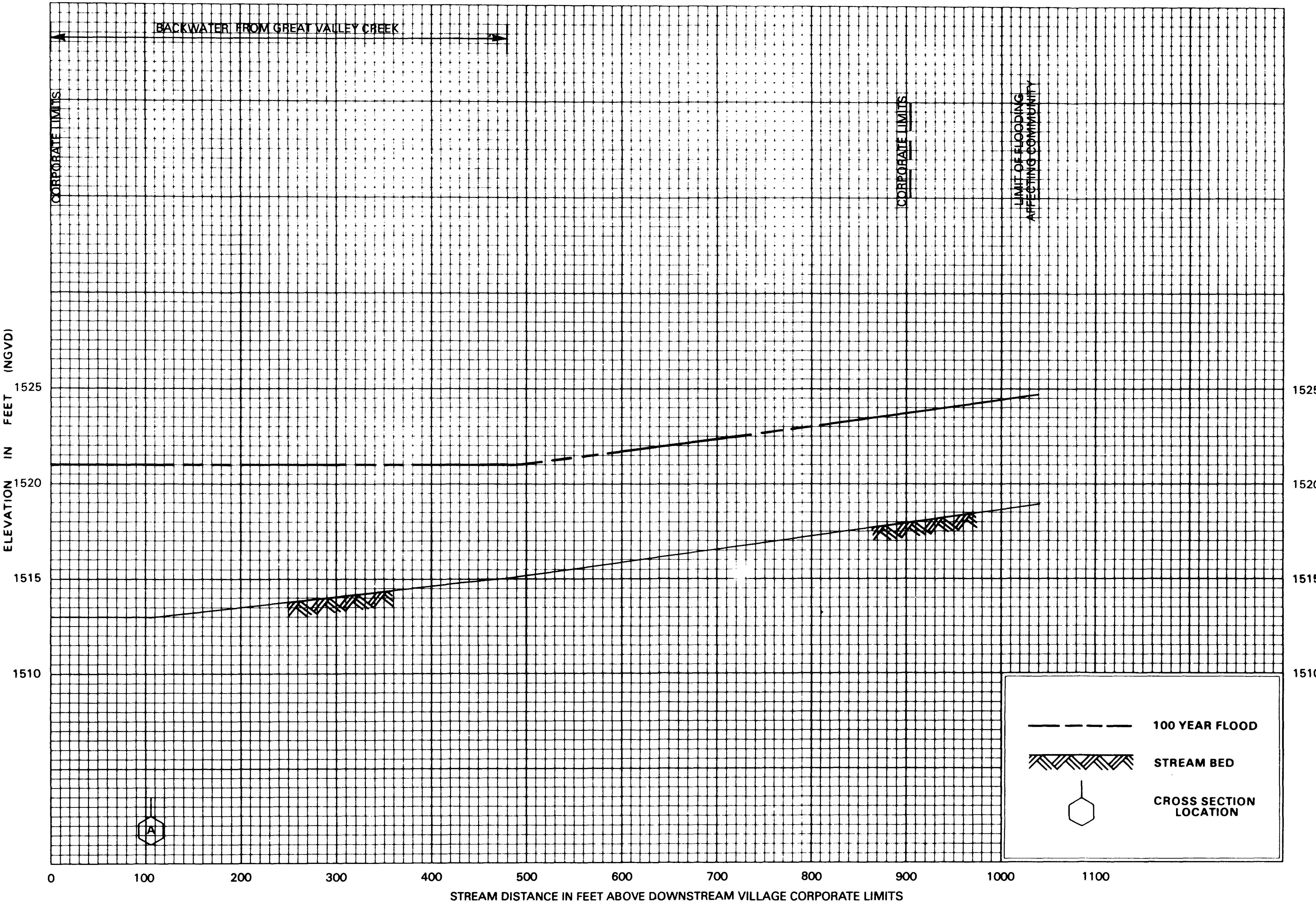
ELK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY

(CATTARAUGUS CO.)

07P



FLOOD PROFILES

HOLIDAY VALLEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF ELLICOTTVILLE, NY
(CATTARAUGUS CO.)

08P